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## VI. DISCUSSION OF PROFESSOR SADLER'S PAPER

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In discussing my colleague's paper on "The Value of Humanistic Studies as a Preparation for the Study of Engineering," I wish to raise my voice in favor of things whose bread-and butter-value is not evident.

Herbert Spencer,<sup>1</sup> in his essays on *Education*, writes at length on "what education is most worth." He says:

If we inquire what is the real motive for giving boys a classical education, we find it to be simply conformity to public opinion. Men dress their children's minds as they do their bodies, in the prevailing fashion. As the Orinoco Indian puts on his paint before leaving his hut, not with any view to any direct benefit, but because he would be ashamed to be seen without it; so a boy's drilling in Latin and Greek is insisted on, not because of their intrinsic value, but that he may not be disgraced by being found ignorant of them—that he may have "the education of a gentleman"—the badge marking a certain social position, and bringing a consequent respect.

While in general men of science will agree with Spencer in looking upon an education limited to so-called humanistic studies (meaning thereby polite literature, grammar, rhetoric, and poetry, including the study of the ancient classics) as a very narrow and bigoted kind of education, yet I am not willing to stand on his side and say that science is the exclusive education of most worth. His wholesale belittling of the classics makes me class him also among the bigots. Is not a position intermediate between the extremes, the sensible place for parents and teachers to stand?

For the sake of definiteness I shall consider whether or not the engineer is better fitted for his life-work if he has had a full high-school course in Latin preparatory to entering the study of engineering. I wish my sons to study Greek too, but I shall base my thesis on the study of Latin.

For the engineer, then, what knowledge is of most worth? And does it include Latin? Knowledge is classified by the thinking man into, (*a*) value for itself alone, (*b*) value for foundation for other knowledge, (*c*) value for training solely.

Let us consider Latin under these three heads, taking them in their inverse order. The boy, or the girl, needs foundation on which to build his education, just as surely as any other builder needs a secure foundation; and, in my opinion, the value of a subject for the foundation training of a boy's mind is of great importance. Now Latin, with its structure obeying fairly consistent rules, is able to furnish the mind with exercise of practical value comparable with the value of exercises to the musician. The study of Latin grammar gives good oppor-

<sup>1</sup> Herbert Spencer, *Education*, p. 7.

tunity of holding the pupil to good consistent work, and leaves little room for vagueness.

But the value of Latin for training solely would not be a sufficient excuse for its use in the education of the child; for the same argument might be made with reference to Sanskrit or Arabic. So let us turn to the consideration of Latin under the second heading—value for foundation for other knowledge. Language study, even if without value in itself, or as training for the mind, is yet necessary for the well-informed engineer; for he should be able to keep abreast of the progress of his profession in other lands, and a reasonable knowledge of French, German, and perhaps Italian may be looked upon as necessary tools of his trade. In my opinion, these modern languages will be better acquired by an engineering student who has had a good Latin training.

We have already established the right of Latin to be included in the curriculum. We shall, however, not rest with a simple right to be included—we shall go on and say that it is unwise to leave the student any option in the matter; and the justification for this stand is that Latin is not only of value for training and for foundation for other knowledge, but it is also knowledge of value for itself alone; in other words, it is a part of "knowledge of most worth." This will be seen when we consider that the Latin language is the most extensive source for the words of our own language, and that no one can really know English, French, or Italian who is a stranger to Latin. The engineer is not a man apart from the rest of mankind. To be a success as an engineer, he must be a man among men who are largely in other walks of life. He must be able to write clear, concise, accurate reports to his clients or employees; and a thorough mastery of English is a tool without which the owner cannot afford to be. Let our engineer, then, be a man of all-around culture, who, though a modern man of science, does not fail to appreciate the good things of yesterday, today, and I believe tomorrow.

But many say that there is not time for four years of Latin in the training of the engineer. I believe that there is not only room for four years, but even room for six years. Why do we tolerate useless studies? Why do we compel our children to learn obsolescent tables of weights and measures, to be forgotten tomorrow? Why do we have courses in physiology whose object is to give children perverted notions of a grand science? Why do we have courses in patriotism—a thing which every boy should learn at home? Why do we waste precious time in mastering absurd spelling? Answer these questions by saying that we will reform our ways, and then the engineering student will find plenty of time for four, or better six, years of Latin, and even some Greek too, and thus not neglect a part of knowledge of most worth.